

Claims

1 A dry cleaning medium based on liquid CO₂ and including from 0.01 to 5% by weight of the cleaning medium of a cleaning additive which is at least one C₆ to C₂₄ hydrocarbyl ester of a multi-carboxylic acid.

5 2 A dry cleaning formulation as claimed in claim 1 wherein the hydrocarbyl ester of a multi-carboxylic acid includes at least one compound of the formula (I):

$$R^1(CO_2 R^2)_n \quad (I)$$

where

10 R¹ is the residue of a C₁ to C₁₀ hydrocarbyl group from which n hydrogen atoms have been removed; and

10 R² is a C₆ to C₂₄ hydrocarbyl group; and

n is from 2 to 5.

3 A dry cleaning formulation as claimed in claim 2 wherein R² is a C₈ to C₂₀ alkyl group.

4 A dry cleaning formulation as claimed in claim 3 wherein R² is a C₁₂ to C₁₈ alkyl group.

15 5 A dry cleaning formulation as claimed in any one of claims 1 to 4 wherein the ester is an ester of adipic acid or a mixture containing such an ester.

6 A dry cleaning formulation as claimed in any one of claims 1 to 5 wherein the average molecular weight of the ester(s) is from 300 to 750.

20 7 A dry cleaning formulation as claimed in claim 6 wherein the average molecular weight of the ester(s) is from 350 to 700.

8 A dry cleaning formulation as claimed in any one of claims 1 to 7 wherein the amount of cleaning additive ester present in the cleaning medium is from 0.1 to 0.5% by weight of the cleaning medium.

25 9 A dry cleaning formulation as claimed in any one of claims 1 to 8 which additionally includes at least one fragrance, optical brightener, fabric conditioner, enzyme and/or bleach.

10 10 A method of dry cleaning which includes contacting textile material with a detergent free dry cleaning medium based on liquid CO₂ and including from 0.01 to 5% by weight of the cleaning medium of a cleaning additive which is at least one C₆ to C₂₄ hydrocarbyl ester of a multi-carboxylic acid..

30 11 A method as claimed in claim 10 wherein the multi-ester includes at least one compound of the formula (I): R¹(CO₂ R²)_n where X, R¹, R² and n are as defined in claim 2.

12 A method as claimed in claim 11 wherein R² is a C₈ to C₂₀ alkyl group.

13 A method as claimed in claim 12 wherein R² is a C₁₂ to C₁₈ alkyl group.

- 14 A method as claimed in any one of claims 10 to 13 wherein the ester is an ester of adipic acid or a mixture containing such an ester.
- 15 A method as claimed in any one of claims 10 to 13 wherein the average molecular weight of the multi-ester(s) is from 300 to 750.
- 5 16 A method as claimed in any one of claims 10 to 15 wherein the amount of cleaning additive multi-ester present in the cleaning medium is from 0.1 to 0.5% by weight of the cleaning medium.
- 17 A method as claimed in any one of claims 10 to 16 in which the cleaning medium additionally includes at least one fragrance, optical brightener, fabric conditioner, enzyme and/or bleach.
- 10 18 A method as claimed in any one of claims 10 to 17 wherein the cleaning process is carried out at a temperature of from -5 to 25°C.
- 19 A method as claimed in claim 18 wherein the temperature is from 10 to 25°C.
- 20 A method as claimed in claim 19 wherein the temperature is from 20 to 25°C.